

DOI: 10.55643/fcapter.4.45.2022.3838

SECURITY-ORIENTED MODEL OF BUSINESS RISK ASSESSMENT

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Received: 09/08/2022

Accepted: 17/08/2022

Published: 31/08/2022

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ABSTRACT

The paper is aimed to develop and test a comprehensive methodology for risk assessment based on a combination of expert assessment techniques and analysis of the sensitivity of profit to individual risk factors. This approach allows for determining the priority of measures to minimize the most significant risks in conditions of limited financial resources of the enterprise.

To form an objective view of the effectiveness of risk management researchers proposed to use a comprehensive methodology for assessing the risks of business activity. As a result, the study formed an optimal configuration of information and analytical support for assessing the level of business risks. This technique is based on a combination of expert assessment techniques and analysis of the sensitivity of profit to individual risk factors and makes it possible, in conditions of limited financial resources, to identify risks that require priority management, and on this basis to form a security strategy for enterprise management.

The results of the approbation of the complex methodology of risk assessment in the activities of domestic industrial enterprises indicate some advantages compared to other methodological approaches in this field of research. Firstly, risk ranking based on a combination of expert assessment and analysis of the sensitivity of profit to risk factors makes it possible to avoid subjectivity when determining the degree of risk impact on the company's performance indicators. Secondly, it becomes possible to objectively substantiate the priority of protective measures, which significantly strengthens the effectiveness of risk management and reduces the conflict of interests in the distribution of limited financial resources.

Keywords: business risks, security management strategy, information model, sensitivity analysis, risk management, risk map

JEL Classification: C10, C44, M21, D81

INTRODUCTION

The constituent of the enterprise's security management strategy is the business risk management policy. The practical implementation of the specified policy is achieved because of shielding measures implementation, which requires the mandatory financial resources outflow. As a result, it reduces the company's ability to finance promising areas of activity. Therefore, the task of determining the priority of measures to prevent risk is actualized, the solution of which requires the search for effective methodical approaches that would make it possible to determine the level of risk with a high degree of reliability and establish the priority of protective measures.

Losses can cause both a decrease in the actual performance of the enterprise and affect the planned results (strategic goals). Failure to take into account the negative consequences of risk exposure can turn a business entity that is operating stably into potential bankruptcy.

Therefore, the development of security management strategies for the enterprise should provide for the identification of risk factors and the justification of ways to overcome or weaken their manifestation to prevent them from becoming threats to business activity.

This actualizes the need for the construction balanced business risk management policy, which is part of the enterprise's security strategy and consists of the measures to neutralize the possible consequences of the manifestation of risks associated with the activities of the business entity.

In general, an enterprise's types of risk management policies are as the following:

- refusal of activities that contain a certain source of risk (for example, replacement of partners, from whom there is a risk of disruption of contractual obligations, or optimization of contractual policy in conditions of a financial crisis when working with buyers);
- acceptance of responsibility for the manifestation of risk with a guarantee of entire compensation of losses at the expense of own sources (reservation, self-insurance);
- transfer of responsibility for risk to other persons (for example, diversification or insurance of risky transactions).

LITERATURE REVIEW

Economic relations are permanently attached to risk, which objectively exists due to the uncertainty of the external environment about the business entity. This is manifested by fluctuations in demand and supply, the multivariate areas of capital investment, the variety of investment opportunities, the limitation of available information, and other circumstances. Therefore, when making managerial decisions in conditions of uncertainty, the management risks losing a particular share of capital, endangering the enterprise's economic interests.

Traditionally, specialists in the field of risk management define risk as the occurrence of an event unfavorable to a business, which leads to losses [1, 2]. Nonetheless, the risk is caused not only by receiving damages and losses but also by failure to achieve the set goal. Therefore, the study considers risk as an event or a group of related events that is a result of uncertainty in the internal and external environment and the result of decision-making that does not ensure the achievement of the set goal. Besides, it is accompanied by unexpected losses and damages.

Analysis of scientific publications [3; 4; 5; 6; 7], devoted to the assessment of the impact of business risks on the formation of security management strategies of the enterprise, made it possible to generalize systematic approaches to measuring the level of risk, in particular:

- the expected value method estimates the risk by multiplying the expected damages (losses) by its probability. This method makes it possible to assess the risk only if statistical data are available on the probability of the occurrence of an adverse event, as well as the financial consequences of its occurrence;
- a mathematical statistics method, according to which the risk is estimated as a variation of a specific indicator and used to determine the mathematical expectation, standard deviation and coefficient of variation for the average value. The higher the coefficient of variation, the higher the risk of deviation of the indicator from its average value;
- the ranking method assesses the risk impact by the probability of an adverse event and the number of losses.

However, the study emphasizes that each of the mentioned approaches is cumbersome enough for practical perception by specialists in the field of risk management. Therefore, as research confirms, 90% of enterprises in risk management are focused exclusively on the personal experience and intuition of risk managers, which are not supported by methodological and mathematical calculations. At the same time, the most popular criterion for the effectiveness of such management is the dynamic growth of profit [8, p. 122].

AIMS AND OBJECTIVES

The article aims to develop and approve a comprehensive risk assessment methodology based on a combination of expert assessment techniques and analysis of the sensitivity of profit to individual risk factors. The methodology allows determining priority measures to minimize the most significant risks in conditions of limited financial resources of the enterprise.

Therefore, to form an objective view of the effectiveness of risk management and consider the practical preferences of risk managers, it is proposed to develop a comprehensive methodology for risk assessment.

METHODS

The introduction of a comprehensive methodology for assessing the risks of entrepreneurial activity as a basic model for the rating assessment of the implementation of protective measures requires the following actions from specialists in the field of risk management:

1. Testing the company's activity for resistance to risk factors using essential break-even analysis tools, namely: break-even point (critical volume of activity, profitability threshold); margin of safety (coefficient of margin of safety); operating leverage (operating leverage factor).

The break-even point is the volume of activity for which revenue from sales (works, services) is equal to the total costs of the enterprise, so each unit of production that exceeds the break-even point will bring profit. On the other hand, if the actual volume of activity is lower than the break-even point, the enterprise will a priori incur losses. Therefore, in conditions of business reduction, a high risk of loss of profit will be characteristic of a high level of the break-even point and vice versa.

The margin of strength (financial margin of strength, margin of financial strength, margin of safety, safety zone) is the level of the current activity of the enterprise that exceeds the break-even volume of activity. The margin of safety shows the maximum permissible size of the decrease in the actual volume of activity without the risk of the enterprise falling into the loss zone. In addition, the margin of safety can be used as a mechanism for determining operating profit because it shows the sales volume above the break-even point, which will undoubtedly bring profit to the company.

For assessing the riskiness of activity, the relative safety margin indicator (safety margin ratio) becomes essential, which allows you to estimate by how much percent the actual volume of activity can decrease before the enterprise enters the loss zone. Based on the results of practical research, individual scientists [9, p. 112] note that if the safety factor is lower than 30%, this is a sign of high risk. Therefore, the higher the margin of safety ratio, the more reliable the company's financial position, and the less negative consequences such unfavorable trends will have for it, such as a decrease in demand for products, a change in market conditions, a change in resource prices, etc.

Operating leverage (production leverage) is a profit management mechanism in conditions of changes in the scope of the enterprise's activity based on optimizing the ratio of fixed and variable costs. The economic meaning of this indicator is as follows: the lower the specific weight of fixed costs in the total amount of enterprise costs, the smaller the amount of marginal income necessary to cover them, and therefore the lower the impact of changes in the scope of activity on changes in the enterprise's profit, and vice versa [10, p. 8].

You can assess the impact of operating leverage on changes in the company's profit using the operating leverage factor, which indicates how much the company's profit will change in the event of a one percent change in the volume of operations. Therefore, in the conditions of a decline in production, industrial enterprises should strive to reduce the factor of operating leverage, which will contribute to slowing down the rate of decline in profit compared to the rate of decline in the volume of activity. This principle must be followed by domestic enterprises operating in the unstable conditions of the economic crisis.

The feedback will also be fair: the higher the size of the operating leverage factor, the more significant the impact on profit as a result of the change in the volume of activity. Therefore, when the volume of activity increases, the company's policy in the field of profit management should be aimed at increasing the operating leverage factor.

A company familiar with these rules, in order to influence the business risk, can set the optimal ratio of fixed and variable costs, giving preference to a high or low operating leverage factor.

2. Delineation of the risks range inherent in individual functions of the enterprise and determination of the probability of their occurrence. At the same time, they proceed from the assumption that the highest probability of manifestation will be those risks that are most often mentioned in their questionnaires by specialists of individual structural divisions of the enterprise or specialists involved for examination.

3. Formation of models of the relationship between risk factors and elements of break-even analysis (variable and fixed costs, volumes of activity, marginal income) to establish each factor's role in the formation of the operating profit of the enterprise.

4. Analyze the sensitivity of the company's profit to risk factors and determine the deviations of the basic profit under the influence of risk factors. At the same time, the risk that led to the greatest loss of basic profit will have the first rank on the scale of assessing the significance of risks.

5. Ranking of risks based on a combined assessment, which includes the professional judgment of experts regarding the probability of risk manifestation and mathematical confirmation of the significance of this risk's impact on the enterprise's financial result. At the same time, the lowest sum of ranks will characterize the priority of decision-making regarding countering the impact of the specified risks and will have the highest (first) overall rank.

6. Establishing the riskiest zones (groups of homogeneous risks) in the company's activities and substantiating the priority of protective measures. The priority rank of implementing protective measures is determined based on the weighted average rank for a separate group of risks. The weighted average rank is calculated by dividing the sum of the ranks of risks included in a homogeneous group by the number of risks in the group. The risk group with the lowest weighted average rank has the highest priority for preventive measures. At the same time, the impact of the risk group with the highest weighted average rank is the least significant, so it can be ignored.

Therefore, the proposed method of assessing business risks makes it possible to determine the risks that require priority management in conditions of limited financial resources. At the same time, the management focuses on the highest rank risks, forming the company's security strategy.

RESULTS

Business entities can use the following methods of reducing risk's impact depending on chosen risk management policy: avoiding risk, transferring risk, reducing the probability of risk, and compensation for losses caused by risk.

Risk can be avoided by refusing to carry out known risky operations. Risk transfer refers to a set of measures that ensure the possibility of transferring responsibility for the consequences of risk to other business entities.

Minimizing the probability of risk manifestation is achieved by avoiding unfavorable factors in the enterprise's activities. For example, the diversification of the deposit portfolio will ensure the avoidance of the risk of loss of funds, and the refusal to enter into agreements with partners about which there is a low percentage of their financial reliability will lead to a reduction in the probability of credit risk.

Risk compensation allows covering losses in case of an adverse event. Methods of risk compensation include the creation of internal reserves or insurance for risky activities.

The main indicator used to substantiate the impact of risks on changes in the company's activity indicators and the formation of a policy regarding their management is the level of risk.

Depending on the impact of the consequences of the risk on the financial state of the enterprise, allowable, critical, and catastrophic risks are distinguished (Table 1).

Table 1. Characteristics of the risk influence the financial condition of the enterprise.	
Risk level	Impact on the enterprise's financial condition and cost of capital.
<i>Tolerable risk</i> (characteristic of the stable operation of the enterprise in conditions of uncertainty)	The impact is defined as small and is characterized by the loss of part of the expected profit and a decrease in the usefulness of assets.
<i>Critical risk</i> (enterprises that inefficiently manage their resources operate in this mode)	The impact is defined as large and is characterized by financial losses in the amount of the expected amount of income from sales and a decrease in the initial value of assets, which leads to the loss of part of the equity capital and, as a result, a decrease in the financial stability of the enterprise
<i>Disastrous risk</i> (businesses operate in this mode – potential bankrupts)	The impact is defined as disastrous and is characterized by losses (damages) exceeding the company's equity.

The level of risk is characterized by a combination of two factors: the probability of the occurrence of the risk, which requires expert assessment, and the strength of the damage, which requires quantitative assessment.

The complex risk assessment methodology was approved at one of the state-owned instrument-making enterprises of Ukraine – State Industry Association (SIA) "Kyivprilad", a member of the Ukrainian Union of Industrialists and Entrepreneurs. Practical implementation of methodological developments was carried out in three stages.

Thus, at the preparatory stage, testing of the activity of SIA "Kyivprilad" was carried out for resistance to risk factors, as well as with the help of a survey of experts (their professional judgment), risks inherent in certain functions of the activity of the investigated enterprise were identified. Their ranking was carried out according to the criterion of the probability of occurrence.

The indicators of the internal (management) report on financial results for the 1st quarter of 2021 and break-even analysis tools, which act as risk indicators, became the informational and methodological basis for testing the activity of SIA "Kyivprilad" for resistance to the influence of risk. The test results are presented in Table 2.

Table 2. Results of testing the activities of SIA "Kyivprilad" for resistance to risk factors in the 1st quarter of 2021.

Indicator	Formula	Indicator value
1. Income from sales (I_s), thousand ₴	---	530 250
2. Variable costs (VC), thousand ₴	---	340 755
3. Marginal income (MI), thousand ₴	$MI = I_s - VC$	189 495
4. Fixed costs (FC), thousand ₴	---	132 377
5. Operating profit (OP), thousand ₴	$OP = MI - FC$	57 118
6. The coefficient of marginal income (K_{mi}), %	$K_{mi} = MI: I_s \times 100$	35.7
7. Break-even point (BeP), thousand ₴	$BeP = FC: K_{mi} \times 100$	370 804
8. Margin of durability (MD), thousand ₴	$MD = I_s - BeP$	159 446
9. Margin of durability coefficient (K_{md}), %	$K_{md} = MD: I_s \times 100$	30.1
10. Operating leverage factor (O_{lr})	$O_{lr} = MI: OP$	3.3

According to the testing results, a high level of riskiness of the SIA "Kyivprilad" activity was established, which was confirmed by the following conclusions:

- a high value of the break-even point is 70% of the income from sales (370804: 530250 x 100). It means that only 30% of the units sold are profitable for the enterprise;
- a low value of the safety factor (30.1%). It means that in the conditions of unstable economic policy in Ukraine, a significant decrease in sales markets within the country, and the loss of business relations with the countries of the post-Soviet space, a 30% drop in volume will turn the company from profitable to unprofitable;
- a high indicator of the operating leverage factor (3.3 times). It means that in case of a decrease in SIA "Kyivprilad" volume of activity, there will be a drop in its profit 3.3 times more than the decrease in the volume of activity.

It makes it possible to determine the riskiest areas of the enterprise under study, establish risk factors and prioritize risks according to the probability of their manifestation (Table 3). Where 1 is the highest risk rank in terms of probability of occurrence.

Table 3. SIA "Kyivprilad" map of risks.

Risk factor	Risk rank by the probability of occurrence (expert assessment)
The rhythm of raw material supplies	1
Production shortage	1
Delays in payments from customers	2
Decrease in sales as a result of competition or ineffective sales management	3
Purchase of defective raw materials and semi-finished products	3
Theft and spoilage of finished products and raw materials in warehouses	2
Inconsistency of the produced products with the demand for them	4
Insolvency of debtors	3
Outdated software	4

Among the risks with the highest level of probability of manifestation, according to experts, are irregularity of raw material supplies, reduction of product quality, unreliable partnership with buyers and banal thefts in warehouses. The specified range of risks fully corresponds to the modern business environment, characterized by unscrupulous partnerships and high corporate corruption.

The analytical stage involved:

- substantiating the relationships between risk factors and elements of the break-even analysis;
- performing an analysis of the sensitivity of the company's profit to the influence of risk factors; and
- establishing the risk rank based on the materiality criterion of the damage caused by its action.

When establishing the dependence between risk factors and indicators of break-even analysis, we were guided by the following features of the enterprise:

- irregular supply of raw materials, inconsistency of the range of products with customer requests causes a drop-in sales volume, which means a decrease in the company's marginal income;
- an increase in production shortages or costs associated with purchasing low-quality raw materials and components causes an increase in the variable cost of products. Given that according to the reporting data of the investigated enterprise, the specific weight of materials in its variable costs is 63%, the increase in the cost of raw materials will affect 63% of variable costs;
- delay in payments from buyers causes a decrease in cash receipts as part of revenue and, as a result, requires the search for additional sources of replenishment of working capital. As such sources, the company uses interest of 18% per annum bank loans. In addition, low payment discipline at the enterprise leads to the write-off of bad receivables, which means a decrease in cash receipts as part of the declared income from sales;
- theft and spoilage of stocks in the company's warehouses, as well as a failure in the operation of the software, cause an increase in the company's mainly operating ongoing costs.

Table 4 gives examples of the relationship between risk factors and break-even analysis elements.

Risk factor	Impact on break-even analysis element
Irregularity of raw material supplies	Declining marginal revenue
Production shortage (increasing losses from shortage)	An increase in the variable cost of production
Delays in payments from customers	Decrease in cash receipts as part of the income from sales
Decrease in sales volumes	Declining marginal revenue
Purchase of defective raw materials	An increase in variable costs due to an increase in the cost of raw materials
Delays in payments from customers, Insolvency of debtors (receivables write-off)	Decrease in cash receipts as part of sales revenue
Theft and spoilage of finished products and raw materials in warehouses, use of outdated software	Increase in fixed (operating) costs of the enterprise

The same (10%) threshold for risk factors change was established to determine the priority of their impact, and corresponding calculations were made. This made it possible to single out the factors that have the most significant impact on the company's profit (Table 5).

Indicator (Formula)	Income from sales (I _s), thousand ₴	Variable costs (VC), thousand ₴	Fixed costs (FC), thousand ₴	Operating profit (OP), thousand ₴	Change in profit compared to the actual value, thousand ₴	Rank of significance
Actual value for the 1st quarter of 2021	530 250	340 755	132 377	57 118	---	---
Recalculation of indicators under the influence of a decrease in marginal income						
$OP = (I_s - VC) \times (1 - 0,1) - FC$	477 225	306 680	132 377	38 168	- 18 950	3
Recalculation of indicators under the influence of the growth of variable costs						
$OP = I_s - (VC \times (1 + 0,1) + (1 \times 0,1 \times 0,63)) - FC$	530 250	$(340 755 \times 1,1) + (340 755 \times 0,063) = 396299$	132 377	1 574	- 55 544	2

(continued on next page)

Table 5. (continued)

Indicator (Formula)	Income from sales (I _s), thousand ₴	Variable costs (VC), thousand ₴	Fixed costs (FC), thousand ₴	Operating profit (OP), thousand ₴	Change in profit compared to the actual value, thousand ₴	Rank of significance
Recalculation of indicators under the influence of a decrease in cash receipts in the amount of sales revenue						
$OP = (I_s \times (1 - (0,1 \times 0,18)) - (1 \times 0,1) - (VC + FC))$	520 706 – 53025 = 467681	340 755	132 377	– 5 451	– 62 569	1
Recalculation of indicators under the influence of the growth of fixed costs						
$OP = I_s - VC - (FC \times (1 + 0,1))$	530 250	340 755	145 615	43 880	– 13 238	4

At the same time, the achieved performance indicators of SIA "Kyivprilad" in the 1st quarter of 2021 were used as the primary indicators.

According to calculations (Table 5), the most significant impact on the change in the profit of SIA "Kyivprilad" is made by risks associated with the low payment discipline of its buyers.

At the final stage, the overall risk rank was determined (Table 6), and on this basis, a system of protective measures was formed, which is the basis of the business risk management strategy.

Table 6. Combined assessment of the SIA "Kyivprilad" risks priority.

Risk factor	Risk rank by the probability of occurrence (expert assessment) (Table 3)	Risk rank according to the amount of damage (estimated estimate) (Table 5)	Sum of ranks	Overall risk level rank
The rhythm of raw material supplies	1	3	4	2
Production shortage	1	2	3	1
Delays in payments from customers	2	1	3	1
Decrease in sales as a result of competition or ineffective sales management	3	3	6	4
Purchase of defective raw materials and semi-finished products	3	2	5	3
Theft and spoilage of finished products and raw materials in warehouses	2	4	6	4
Delays in payments from customers, insolvency of debtors (receivables write-off)	3	1	4	2

The assessment results of the risk materiality (Table 6) confirm that two types of risk significantly impact the company's performance: the growth of production defects and low payment discipline. Whereas based only on expert assessments, priority should be given to improving the policy of cooperation with suppliers of raw materials to prevent disruption of the rhythm of supplies.

Set in the table. The sixth level of risk is used to justify the risk management policy of business activities and prioritize implementing protective measures. This required coordination of the occurrence of homogeneous risks and measures to neutralize them, which is presented in Table 7.

Table 7. Ranking of measures to counter the risks of SIA "Kyivprilad" activity.

Type of risk	Overall risk level rank	The weighted average value of the rank by group	Risk management measures	Activity group rank
Delays in payments from customers	1	1.5	Payment discipline management measures	1
Insolvency of debtors	2			
Production shortage	1	2.67	Product quality management measures	2
Theft and spoilage of finished products and raw materials in warehouses	4			
Purchase of defective raw materials and semi-finished products	3			

(continued on next page)

Table 7. (continued)

Type of risk	Overall risk level rank	The weighted average value of the rank by group	Risk management measures	Activity group rank
Disruptions in the production process due to irregular supply of raw materials	2	3.67	Marketing and logistics measures	3
Decrease in sales as a result of competition or ineffective sales management	4			
Inconsistency of the produced products with demand	5			
Outdated software	6	6	Ignore	4

The priority rank of implementing protective measures is determined based on the weighted average rank for a separate group of risks. The risk group with the lowest weighted average rank has the highest (first) rank of precautionary measures. At the same time, the impact of the risk group with the highest weighted average rank is the least significant, so it can be ignored.

According to the results of the rating assessment, the priority of directing financial resources should be given to measures to increase payment discipline and improve interaction with the company's customers, as well as measures related to increasing responsibility for the quality of manufactured products.

Therefore, the policy in the field of business risk management should consist of rejecting types of activities that contain a defined source of risk; accordingly, protective measures should be aimed at avoiding risk (for example, replacing partners at risk of breach of contractual obligations). As for the risks of product quality reduction, their management should include responsibility for the manifestation of the risk with a guarantee of total compensation of losses from their sources (reserving, self-insurance). Accordingly, protective measures should be compensatory and consist of self-insurance of risky operations associated with decreased product quality.

DISCUSSION

The use of the proposed assessment methodology in the practical activities of domestic enterprises will ensure the implementation of multi-level systematic monitoring of business risk management measures. At the same time, the formalization of the assessment process, on the one hand, will enable the correct use of analytical techniques and increase the reliability of the obtained results. On the other hand, it will reduce the subjectivity of risk management specialists when they make risk management decisions.

CONCLUSIONS

The developed and tested comprehensive methodology of risk assessment allows us to identify the following advantages in comparison with other methodological approaches in this field of research, namely:

- risk ranking based on a combination of expert assessment and analysis of the sensitivity of profit to risk factors makes it possible to avoid subjectivity when determining the degree of risk impact on the company's performance indicators;
- the possibility of determining the priority of protective measures in conditions of limited financial resources, which significantly increases the effectiveness of risk management;
- strengthening the subjective assessment of risk managers with mathematical indicators calculated according to factor analysis of the influence of individual risk factors on the company's profit.

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БЕЗПЕКООРІЄНТОВАНА МОДЕЛЬ ОЦІНЮВАННЯ РИЗИКУ ПІДПРИЄМНИЦЬКОЇ ДІЯЛЬНОСТІ

Стаття спрямована на розробку та апробацію комплексної методики оцінки ризику, яка базується на поєднанні прийомів експертного оцінювання та аналізу чутливості прибутку до окремих факторів ризику. Такий підхід дозволяє визначити пріоритетність заходів із мінімізації найбільш істотних ризиків в умовах обмежених фінансових ресурсів підприємства.

Із метою формування об'єктивного уявлення про ефективність управління ризиками та з урахуванням практичних уподобань ризик-менеджерів запропоновано використовувати комплексну методику оцінювання ризиків підприємницької діяльності, у результаті застосування якої формується оптимальна конфігурація інформаційно-аналітичного забезпечення оцінювання рівня підприємницьких ризиків. Ця методика базується на поєднанні прийомів експертного оцінювання та аналізу чутливості прибутку до окремих факторів ризику і дає можливість в умовах обмежених фінансових ресурсів визначити ризики, що потребують пріоритетного управління, і на цій основі сформувані безпекову стратегію управління підприємством.

Результати апробації комплексної методики оцінювання ризику в діяльності вітчизняних промислових підприємств указують на низку переваг у порівнянні з іншими методичними підходами цього напрямку досліджень. По-перше, ранжування ризиків на основі комбінування експертного оцінювання та аналізу чутливості прибутку до факторів ризику вможливує уникнення суб'єктивізму при визначенні ступеня впливу ризику на показники діяльності підприємства. По-друге, з'являється можливість об'єктивного обґрунтування пріоритетності захисних заходів, що значно підсилює ефективність управління ризиками та знижує конфлікт інтересів при розподілі обмежених фінансових ресурсів.

Ключові слова: ризики підприємницької діяльності, безпекова стратегія управління, інформаційна модель, аналіз чутливості, управління ризиками, карта ризиків

JEL Класифікація: C10, C44, M21, D81